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## TRANSDERMAL ALCOHOL MONITORING IN A CONTROLLED SETTING

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New methods for monitoring alcohol use could be of use to clinicians, the criminal justice system, and researchers. We studied the validity of alcohol concentration measures by a light-weight, non-invasive, device (SCRAM™) that measures transdermally. **Methods:** Twenty-four screened and consented subjects were admitted to the University of Colorado's General Clinical Research Center (GCRC); all were given a standardized diet. Eight were administered 250 ml of a (zero-dose) non-alcohol beverage, eight were administered 0.28 g/kg of ethanol, and eight were administered 0.56 g/kg; all subjects were blinded to dose assignment. Breath and transdermal alcohol concentrations were subsequently taken every 15-30 minutes. Data already collected but not yet analyzed of "free-ranging" alcohol dependent and non-alcohol dependent participants wearing the device in the community will also be presented. **Results:** No GCRC subject receiving the non-alcoholic beverage had positive alcohol readings transdermally. All subjects administered alcohol had positive transdermal alcohol concentration curves. The transdermal device was able to distinguish low and high alcohol dosing groups by peak transdermal alcohol concentration ( $t_{14}=3.37$ ;  $p<0.01$ ) and area under the transdermal alcohol concentration curve ( $t_{14}=3.42$ ;  $p<0.01$ ). The transdermal alcohol concentration curve was broader (right-shifted) and had lower peaks than the breath alcohol concentration curve. **Conclusions:** Within the limits of the study, the device was sensitive to small to moderate amounts of alcohol consumption. The device shows discriminative validity as a quantitative measure of alcohol consumption. **Support:** This research was supported by a grant from Alcohol Monitoring Systems, Inc., NIDA grants K08DA016314, DA 09842, DA12845, NIMH grant 5T32MH15442 and NIH grant M01#RR00051.

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